UNIVERSITY OF CALIFORNIA
COLLEGE OF AGRICULTURE
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AGRICULTURAL EXPERIMENT STATION
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WHEN TO VACCINATE AGAINST HOG CHOLERA

This station advises all hog owners to vaccinate their swine against hog cholera as soon as the danger of exposure is suspected. The late summer and fall is the time when hog cholera is most prevalent. Epidemics have already started in several places in the state, and even in localities supposed to be free from the disease farmers are warned to keep their hogs isolated and to watch for signs of sickness.

Hog cholera in the living sick animal does not present symptoms which positively distinguish it from other affections. If one of the hogs gets sick it should be removed at once from the herd. Before it dies a veterinarian should be called to kill and autopsy the animal and take temperatures on the others. This will usually show whether or not the disease is cholera. Do not wait until an animal dies, for if cholera is present great losses will result from its spread unless the healthy hogs are immunized at once.

If pigs get off feed or show any sign of sickness the probability of its being cholera should be considered, since nine out of ten sick hogs have this disease. Recent investigations have shown that most of the so-called cases of swine plague, infectious pneumonia, contagious sore eyes, staggers, and oftentimes paralysis, are really hog cholera, and the failure to recognize the underlying cause of such conditions has resulted in much unnecessary loss.

ADVICE CONCERNING VACCINATION

Owing to the expense of vaccination and the danger from carelessness in the use of virus, this station recommends the immunization of hogs only in infected localities, except in case of valuable swine which are to be shipped for exhibition or breeding purposes. There are two methods of immunizing hogs against cholera. In one the serum alone is used, producing an immunity lasting from thirty to ninety days; in the other, a small amount of virus (virulent hog-cholera-producing blood) is injected simultaneously with the serum, but at a different point in the body of the animal. This latter is known as the *simultaneous method* and will produce lasting immunity, except in suckling pigs and small shotes, in which case the immunity may

disappear as they mature. Some serum manufacturers and others in their efforts to sell serum have advised all hog owners to immunize, stating that hog cholera is so prevalent that no farmer can afford to run the risk of keeping a susceptible herd. Under California conditions general vaccination at present would be desirable only in certain badly infected districts, while in other localities it would be a needless expense. The general use of the simultaneous method in non-infected districts may spread hog cholera, although we have seen no evidence that it has ever done so, while the use of serum alone would be a waste of money, for the reason that the immunity from this method is so short.

WHAT METHOD TO USE

There is often a difference of opinion among veterinarians as to when to use the serum alone and when virus should be used with the serum. As previously stated, vaccination is not advisable unless there appears to be danger of cholera infection.

In infected herds this station usually advises the simultaneous method on all healthy hogs, except sows heavy with pig or with litters less than six weeks old. Such sows and their litters may receive serum alone, but should be re-immunized with serum and virus six to ten weeks after farrowing. Temperatures should always be taken and the animals which have over 104° F. should be considered already infected and given serum alone, using a 50 per cent increased dosage.

Pigs from immune sows, although somewhat resistant, are not always free from the liability of having cholera. Some litters may be farrowed in infected pens and go past weaning time without becoming infected, while others get cholera within two or three weeks after farrowing. The pigs should be closely watched and if any show signs of cholera they should be given the serum alone. This will usually carry them well past weaning time, when they can be given the simultaneous treatment. If the herd seems to be extraordinarily susceptible to cholera, however, it will be necessary to give the serum alone more than once in order to carry them several weeks past weaning. Pigs given the simultaneous treatment soon after weaning sometimes lose this protection within a few months. To acquire a long-time immunity, pigs should weigh at least fifty or sixty pounds at the time of receiving the simultaneous treatment. At this weight the immunity usually lasts the ordinary lifetime of the hog. Certain swine raisers in this state whose herds are constantly exposed to infection and who have developed a thoroughly immunized lot of brood sows are able to permanently immunize the pigs at six weeks of age by injecting a slightly increased dose of virus (2 c.c.) and a small dose of serum (15 c.c.).

All hogs giving visible symptoms should be killed or placed in isolation pens without vaccination. *It is a waste of money to treat visibly sick hogs.* Notices should be posted, warning visitors to keep out, and the premises should be considered infected for at least thirty days after the disease has disappeared. Linen posters, 14 × 11 inches, printed as follows can be obtained free by writing to the Veterinary Division, University of California, Berkeley, California:

WARNING

The hogs on these premises have been vaccinated with

VIRUS AND SERUM.

No visitors allowed in these pens or fields.

NOTICE

The hogs on these premises are free from cholera.

Owners of infected herds are

WARNED TO KEEP AWAY.

No visitors allowed in hog pens or fields without permission.

Trespassers will be prosecuted to the full extent of the law.

(Signed).....

In exposed herds where no sickness is present the use of the simultaneous method is advised. The vaccination of sows heavy with pig and those having litters less than six weeks old should be postponed and such animals isolated in pens protected from the possibility of infection.

Regarding the immunizing of small pigs against cholera, it has already been mentioned that the immunity frequently disappears in from four to six months, therefore it is advisable when no sickness is present to postpone the vaccination of pigs until they weigh at least fifty pounds. The sows on which such pigs are suckling should not be given virus with serum until the pigs are treated. When it is deemed necessary, serum alone may be used on sows and their pigs, but after an interval of several weeks they should be re-immunized by the simultaneous method.

The use of the so-called double method, consisting of serum alone, followed in ten to fourteen days with serum and virus, has not proved satisfactory under California conditions. Unless an interval of at least three weeks is allowed to elapse between injections immunity appears to be much shorter than that conferred by the simultaneous injection.

The information furnished in this leaflet should not be considered as sufficient to qualify the average hog owner to use serum and virus. Persons who desire to perfect themselves in the technic of vaccination so that they may vaccinate their own hogs are advised to write to the Veterinary Division and arrange to take the personal instruction which is given at certain times at the hog serum laboratory. Persons who come for such instruction should plan to stay at least two days.

ANNOUNCEMENT CONCERNING THE SALE OF ANTI-HOG-CHOLERA SERUM AT COST

The University of California manufactures anti-hog-cholera serum and is authorized by act of the legislature to sell it at actual cost of production to any bona fide resident of the state who is engaged in hog raising. At present the cost is 1½ cents per cubic centimeter, the same charge being made for both serum and virus. Both must be kept cool and used as soon as possible after being received. Neither serum nor virus is returnable for credit. This station will not send virus except for use by a qualified man and then only in case hog cholera exists in the locality, one exception to this being that for the accommodation of breeders who desire to sell immune stock or to protect hogs which are sent to fairs arrangements can be made to have the swine immunized, provided the work is done by a representative of this station and the owner agrees to hold the hogs in strict quarantine for at least thirty days after immunization.

All applications should specify in writing the amount of serum and virus desired or the approximate weights of all hogs to be treated. In case serum is ordered by telephone or telegraph a confirming order signed by the owner of the hogs should be sent by mail. Serum will be shipped only when cash accompanies the order, or C. O. D.

Address all communications to *The Veterinary Division,* University of California, Berkeley, California.

On this map is indicated the approximate location of the 388 ranches on which the anti-hog-cholera serum produced by the University of California was used between July 1, 1914, and March 31, 1915.